Galectin-3

**Disease states that may lead to increased galectin-3 release:**
- Hypertension
- Subclinical myocardial injury
- Cardiovascular disease

**Increased galectin-3 release results in:**
- Cardiac fibrosis
- Adverse cardiac remodeling

**Description**
Galectin-3 is one of the most widely studied galectins, a family of soluble B-galactoside-binding lectins that play a regulatory role in inflammation. Galectin-3 affects the synthesis of matrix compounds, such as type I collagen. When cardiac tissue is injured, macrophages infiltrate the tissue and secrete galectin-3, which promotes collagen synthesis and ultimately leads to cardiac fibrosis and adverse cardiac remodeling.

Galectin-3 is independent of, and complementary to natriuretic peptides, as they identify separate and distinct biological processes that contribute to development and progression of heart failure. Galectin-3 is a mediator of cardiac fibrosis and adverse cardiac remodeling, whereas natriuretic peptides such as NT-proBNP or BNP, are released by cardiomyocytes in response to myocardial stretch.

**Clinical Use**
The Galectin-3 test may be used to help identify individuals at risk of future chronic heart failure due to hypertension.

**Clinical Significance**
- Elevated levels of galectin-3 in hypertensive individuals may suggest increased inflammation, collagen deposition, and fibrosis that can lead to adverse cardiac remodeling.
- Galectin-3 levels may be used to guide the selection of medications in hypertensive individuals, as angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) demonstrate reduction in left ventricular mass.

**Testing Frequency**
Galectin-3 testing is determined by an individual's medical history, but may be performed semi-annually or annually as necessary. If the initial test result is abnormal, then follow-up testing may be performed within 3-6 months following treatment.

**Specimen Type**
The galectin-3 test can be performed on either an EDTA plasma or serum specimen. Fasting is not required.

**Commercial Insurance or Medicare Coverage**
Coverage guidelines, also known as NCD (National Coverage Determination) or LCD (Local Coverage Determination), have not been established or posted by CMS (Medicare & Medicaid). We have reviewed the larger Carriers (Aetna, United HealthCare, Cigna, Blues) and information has not been posted or is limited. Medical necessity and specificity of diagnosis should be provided when ordering this test.
References


Treatment Considerations†

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

- Assess blood pressure.
  - If not at an optimal level, consider initiating or titrating antihypertensive therapy.10,11

- Assess for heart failure.4-9,12,13
  - If heart failure is present or suspected, reference the American College of Cardiology/American Heart Association/Heart Failure Society of America (ACC/AHA/HFSA) guidelines for management of heart failure.14

Assess the presence of conditions associated with organ fibrosis, cancer, human anti-mouse antibodies or rheumatoid factor, or high levels of gamma globulins (>2.5 g/dL), as these may contribute to abnormal galectin-3 results.15,16

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